RoyalTek Bluetooth GPS Receiver

RBT-2001

Preliminary User Manual

Version 1.0
SiRF Star III GPS Engine Inside



Published on May, 2005 by RoyalTek Company Ltd.

Content

6. GPS Test on PDA of Palm OS 24

1. Product Introduction

1.1 Overview

RoyalTek the first *SiRF Star III* Bluetooth GPS receiver, *RBT-2001*, is the successor of well-known *RBT-2001* Bluetooth GPS receiver in 2005. It uses *SIRF Star III* extreme fast TTFF GPS engine and inherits the previous strength point by using the same battery (Lithium-ion battery) of Nokia 6100 cell phone. With the same dimension of 70(L) x 41(W) x 23mm(H) and weight only 60g, making it an ideal solution to carry everywhere.

1.2 Main Features

- *SiRF Star III* GPS chipset
- 20 parallel channels
- NMEA0183 compliant protocol
- Extreme fast TTFF at low signal level.
- Auto recovery while RTC crashes
- Adopt TCXO as GPS core clock source
- Industrial Standard
- Selectable Baud Rate
- Trickle Power is supported
- WAAS/ ENGOS is supported

1.3 Product Notification

- Operating temperature range -10 ºC to +60 ºC
- Charger operating temperature range 0 ºC to +60 ºC
- Battery Storage temperature range -20 ºC to +70 ºC
- 7hr at full charge continuous operation mode.
- Humidity range up to 95% no condensing

1.4 Application

- PDA and Cellular Phone Navigation
- Consumer wireless GPS
- Automotive Vehicle Tracking
- Personal Positioning
- Sporting and Recreation

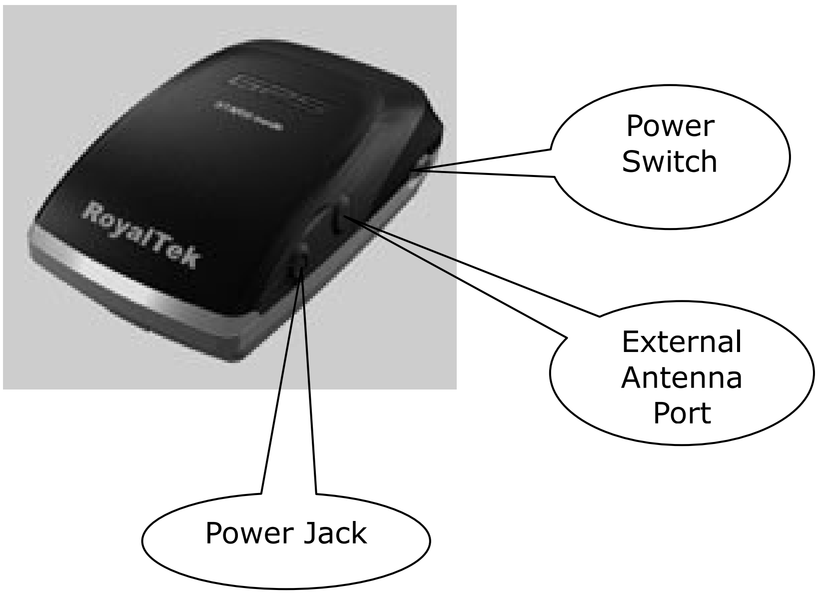
2. Before Start

2.1 Check the Package Content

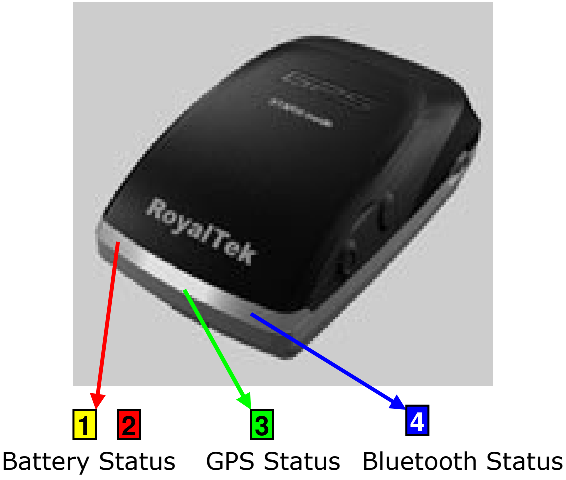
Before you start using *RBT-2001*, please check out if your package includes the following items. If any item is damaged or missed, please contact your reseller at once.

● RBT-2001 Bluetooth GPS receiver ● Car Charger ● CD
● AC Adapter(optional) ● External antenna(optional)
● Backup battery(optional) ● Leather case(optional)
● String(optional)

2.2 Power Switch, Power Jack & External Antenna Port



2.3 LED Display



1	Yellow	Yellow LED indicates power is in charging
2	Red	Blinking red LED indicates low power
3	Green	Blinking Green LED indicates position is fixed
4	Blue	Blinking Blue LED indicates Bluetooth is connected

2.4 Hardware Features

2.4.1. Power Switch

Power ON / Power OFF

2.4.2. Power Jack

The power jack allows you to connect to either a DC (included) or AC power charger to recharge the internal battery.

2.4.3. External Antenna Port

If you have an external antenna with a MC Card (available separately), you can use it instead of the *RBT-2001* receiver's internal antenna. Simply plug your external antenna into the antenna port.

2.4.4. Bluetooth Status LED (Blue)

Flashing - Bluetooth is on and ready to transmit.

2.4.5. GPS Status LED (Green)

Flashing - Position is fixed.

Steady light – Device is on but position is not fixed.

2.4.6. Battery Status LED (Red/Yellow)

None - Battery has adequate power supply.

Red - Power is low. Charging immediately is required.

Yellow - Connected to power charger, charging.

LED off - Battery is fully charged.

2.5. Getting Started

2.5.1. STEP 1: Charge the Battery

Before you use *RBT-2001*, the battery must be charged for at least 4 hours. Plug car charger into power jack and cigar-lighter separately. As *RBT-2001* is in charging, the Yellow LED will be lighted up. When the battery is fully charged, the Yellow LED will be turned off. Unplug car charger from power jack and cigar-lighter separately.

2.5.2. STEP 2: Turn on Receiver and Wait for GPS Fix

If the position has not been fixed yet, the Green LED will be still. If the position has been fixed, the Green LED will be blinking.

You are ready to connect to your Bluetooth-enabled mobile device and use your GPS application.

2.5.3. STEP 3: Connect to Bluetooth-Enabled Devices

From your Bluetooth-enabled handheld device, execute Bluetooth application software to search *RBT-2001* and then connect it to your device. If the connection between your device and *RBT-2001* is successful, the Blue LED will be blinking.

Note: Type in pin code=0000 during configuration.

2.5.4. STEP 4: Connect to your Navigation Software

- Load your GPS mapping or routing software, along with the corresponding maps of the areas that you are occupying or plan to travel to.
- Start the application. Make sure the application is set for the COM port that your Bluetooth-enabled mobile device will use for serial communication. Now you should be ready to use

your GPS application as directed by the user documentation that came with the software. More configurations may be necessary.

- Refer to the following software application user manual to set up the parameters of the device via Bluetooth radio.

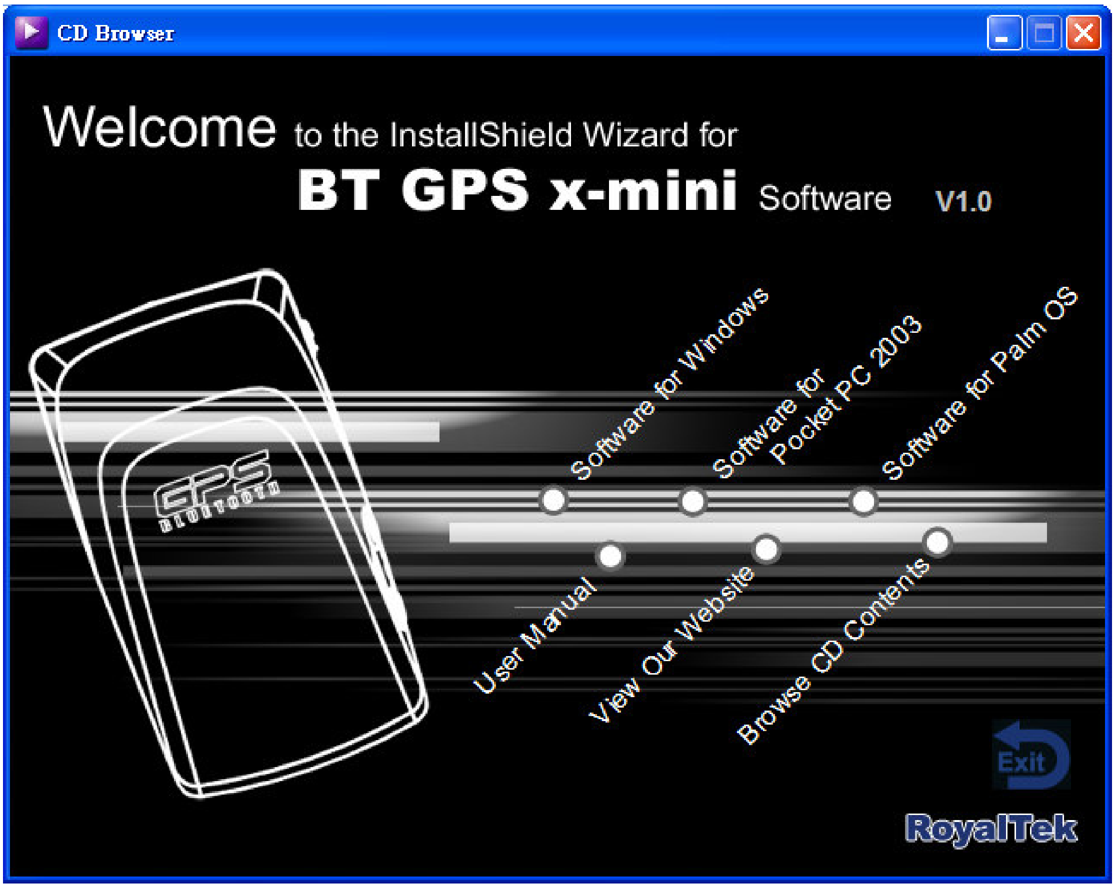
2.6 How to replace Lithium-ion Battery

- Open the bolt on the bottom cover of *RBT-2001* and take the Lithium-ion battery out.
- Place new Lithium-ion battery into the room of *RBT-2001*.
- The *RBT-2001* Lithium-ion battery is replaceable and rechargeable.
- The *RBT-2001* Lithium-ion battery can last more than 7 hours in continuous operation mode.

2.7 How to use Car Charger to charge your handheld device

- Connect car charger into your adapter connector of *RBT-2001*.
- Plug adapter connector into handheld device connector and plug car charger into cigar-lighter.

3. Software Installation

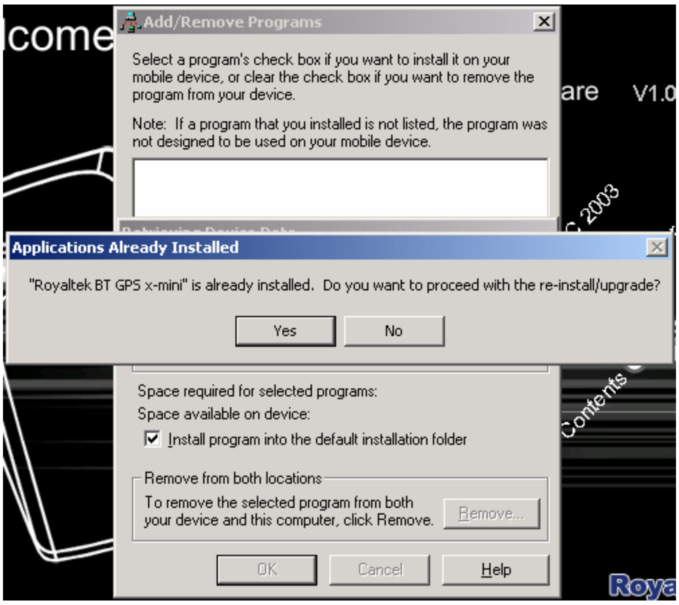


The Main Menu of Installation CD shows as above.

- Click the **Software for Windows** to install the PC software application.
- Click the **Software for Pocket PC 2003** to install the PDA software application.
- Click the **Software for Palm OS** to install Palm software application.
- Click the **User Manual** to open the user manual of Bluetooth GPS.
- Click the **View Our Website** to link our http://www.royaltek.com, please make sure your PC connects to Internet first.
- Click the **Browse CD Contents** to open the explorer to browse the files within the CD.

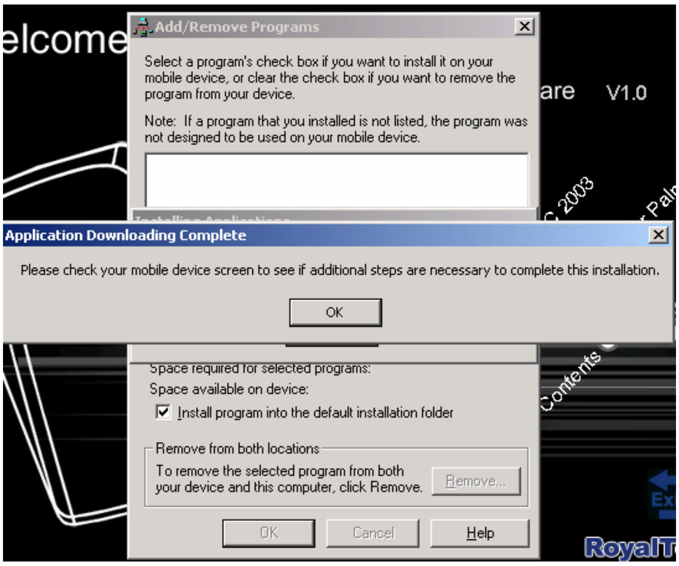
3.1. Install PDA Software Application

Before you click the **"Software for Pocket PC 2002; Software for Pocket PC 2003"** to install the PDA software application from CD, you have to synchronize the PDA and your system. Then the following window will show in your system as below:



Click "Yes>" to continue. Or click "No" to select the other destination to install, or "Cancel" to give up installation.

Click " OK" to complete the installation.



You can also see the “Installing RoyakTek **BT GPS x-mini** ” message box.

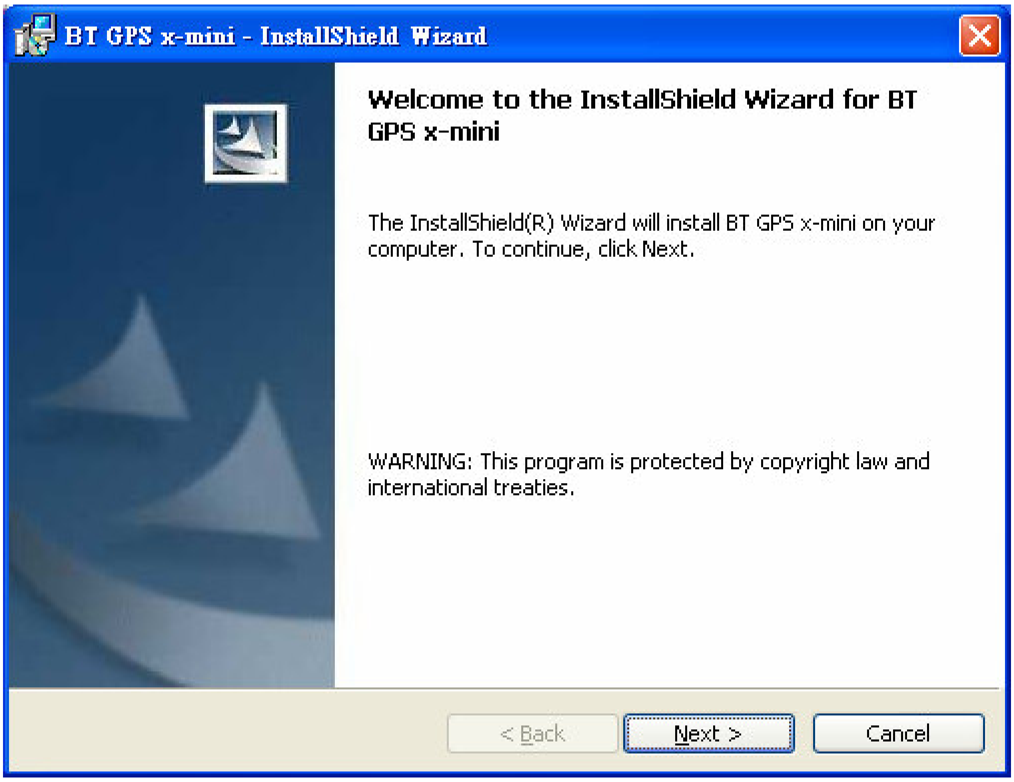


Note: About to install the software application to your PDA, please refer to your user manual of your PDA manufacturer.

3.2. Install PC Software Application

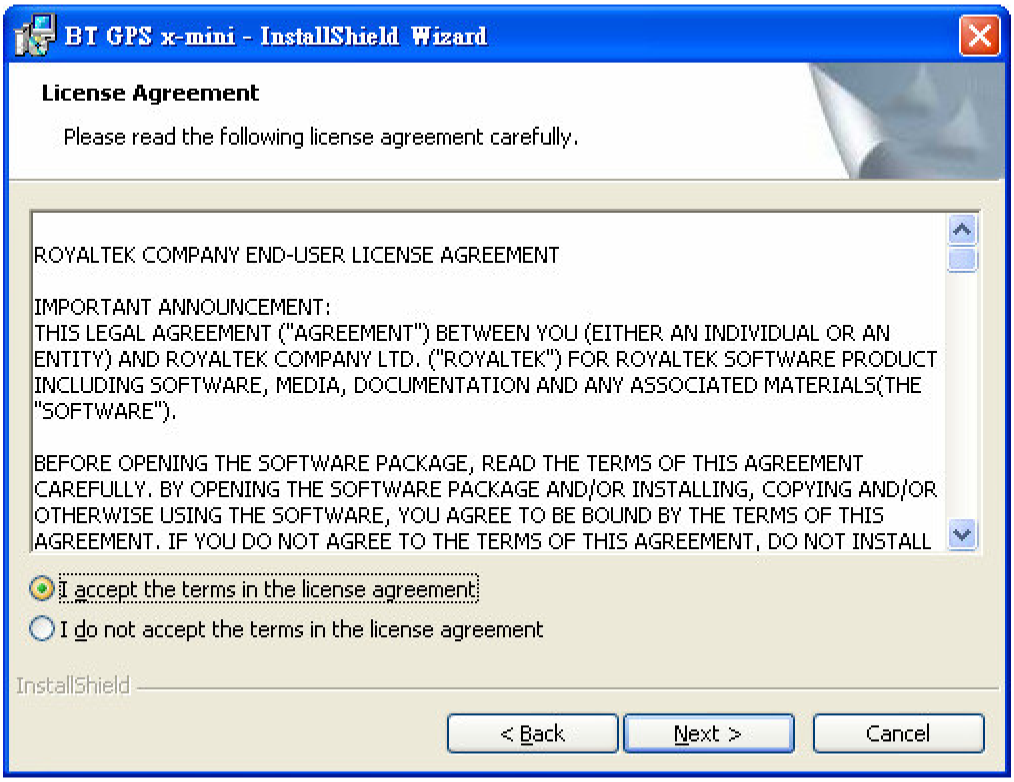
Install the pc software application from CD.

When screen shows the installation window as follows:

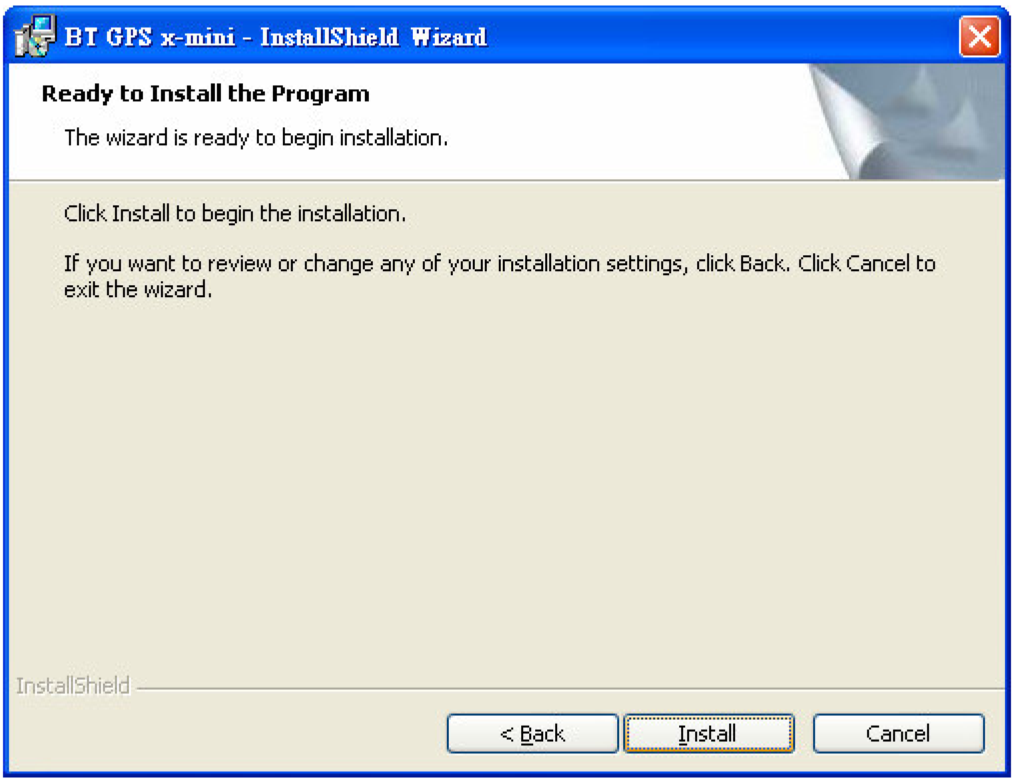


Click “Next> to next page”, or click”<Back” to back last stage or “Cancel” to give up installation.

To the License Agreement page:

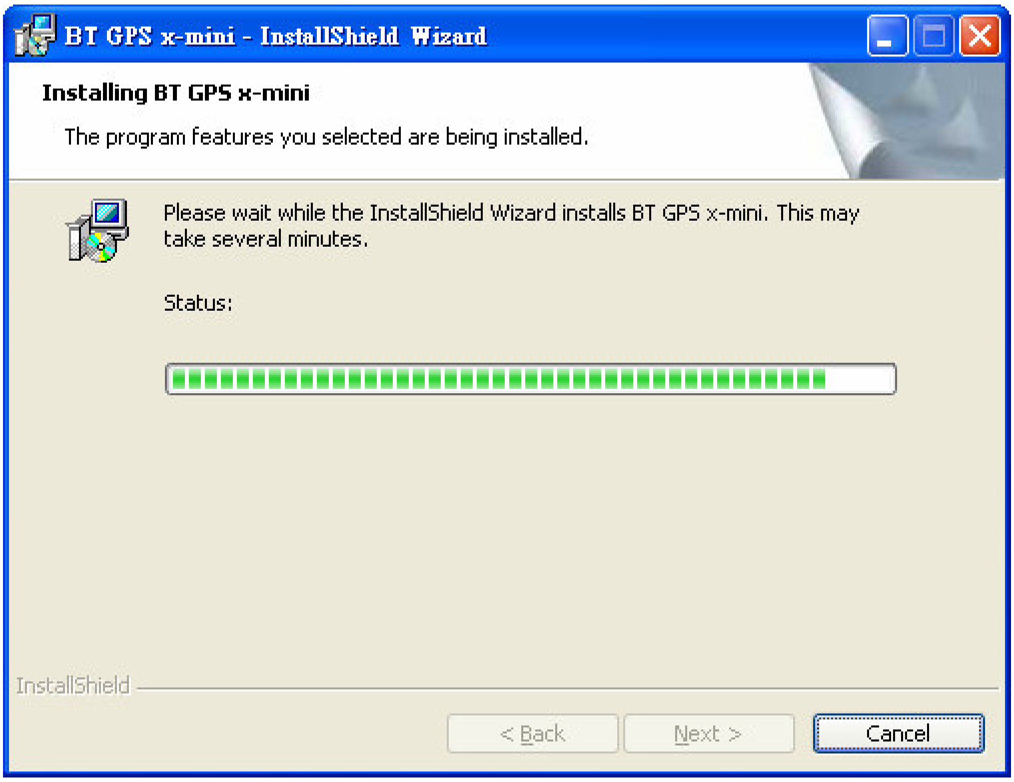


Click " I accept the terms of the license agreement" then click "Next>" to next page, or click"<Back" to back last stage or "Cancel" to give up installation.

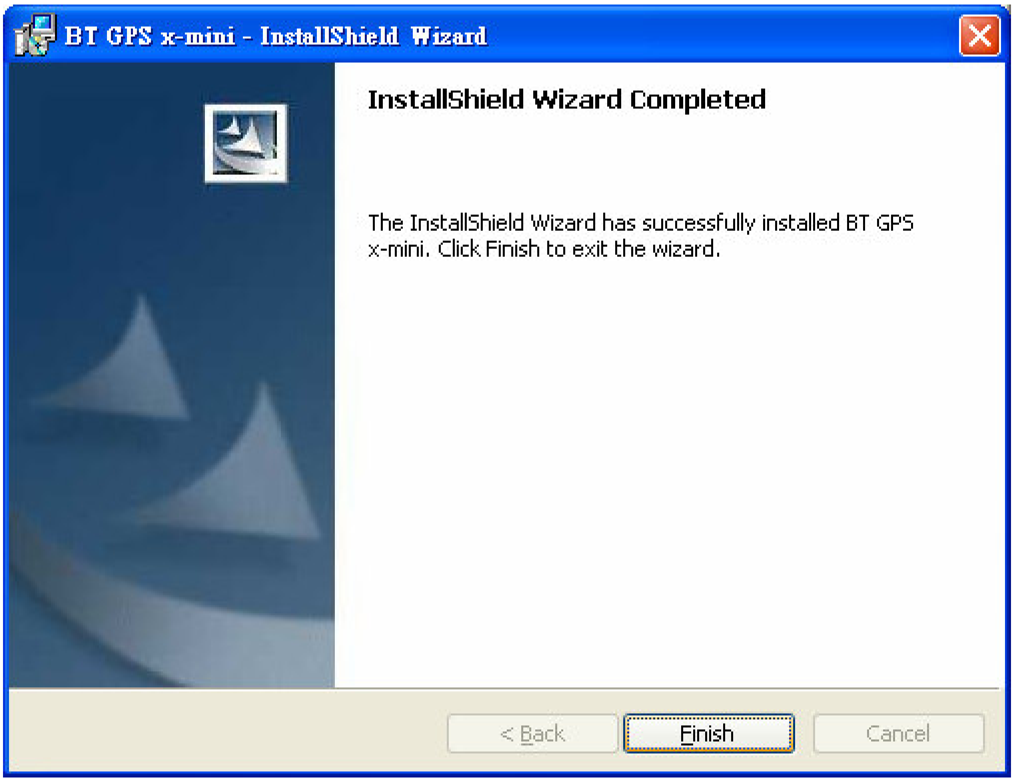


Click "Install" to start installation. Or click"<Back" to back last stage

or "Cancel" to give up installation.

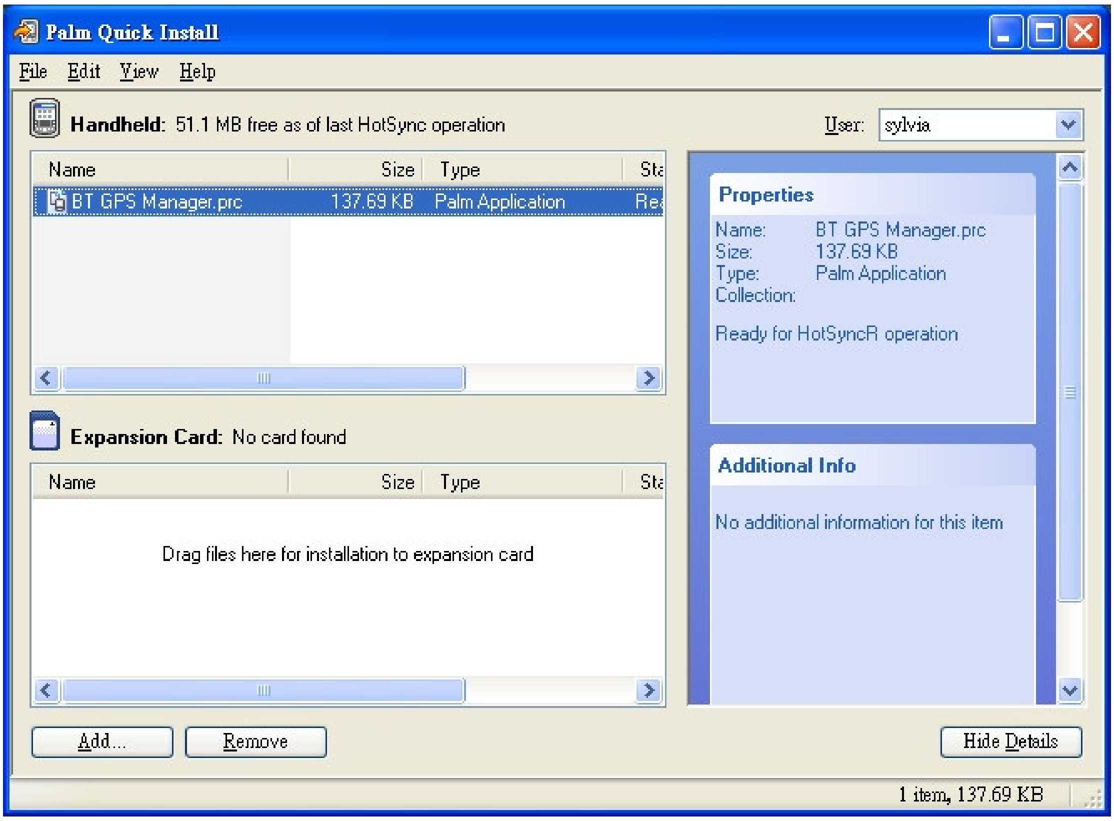


Then start installation. And finish installation will ask you to restart your computer as follow window.



Please click "Finish" to finish the Installation.

3.3 Install Palm Software Application



Note:

To execute this Palm Software Application, please install Palm software in advance.

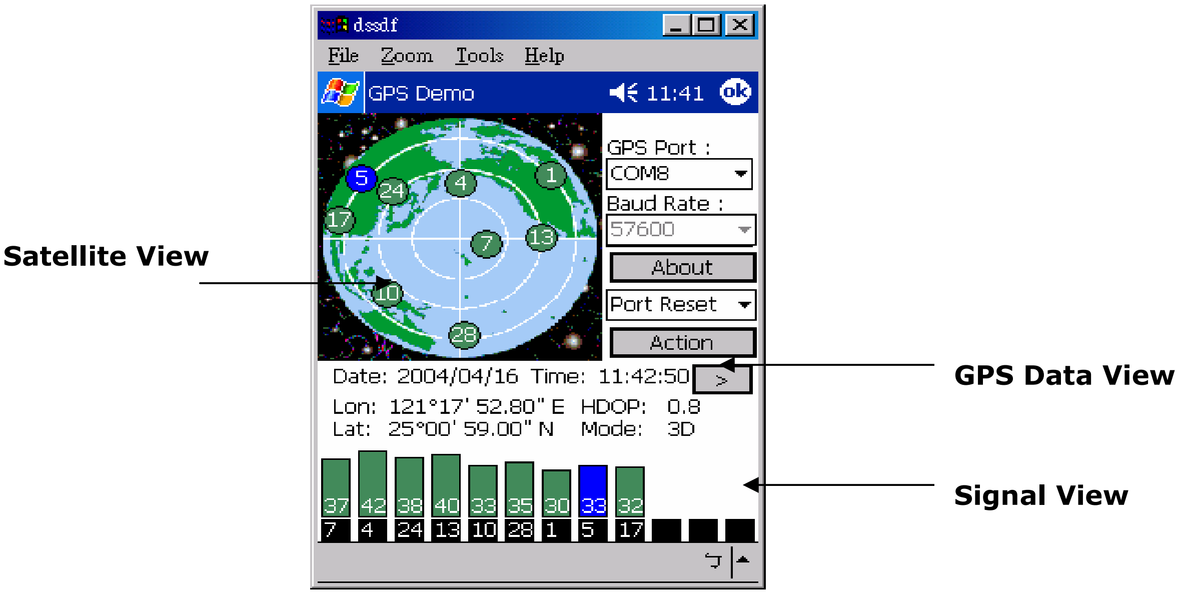
4. GPS Test on PDA

4.1. Execute GPS Demo Program



Execute RoyalTek GPS Demo program by double clicking **RoyalTek GPS Demo** icon on **Programs** menu.

4.2. GPS Demo Screen



4.2.1. GPS Port:

Searching GPS port automatically or select COM1 as the default COM port.

4.2.2. Baud Rate:

Select baud rate: 57600.

4.2.3. About:

Displays software version.

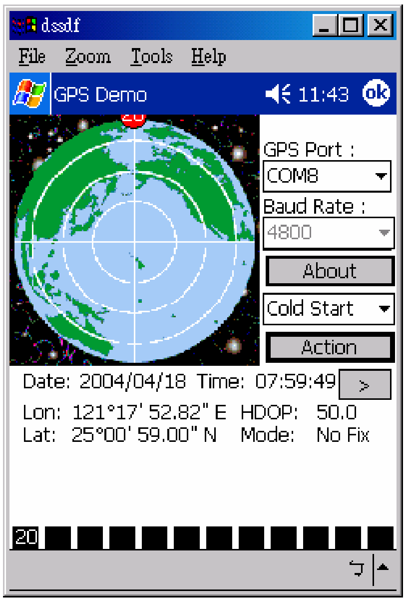
4.2.4. Action:

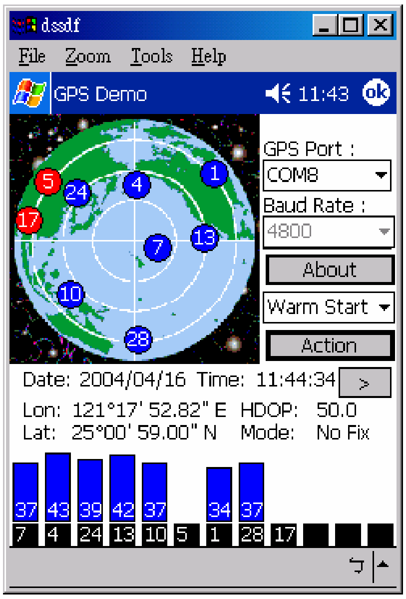
Select GPS action.

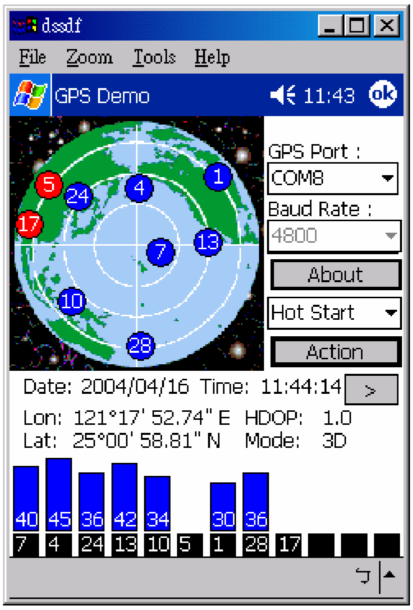
4.2.5. >

Next screen.

4.3. Cold/Warm/Hot Start

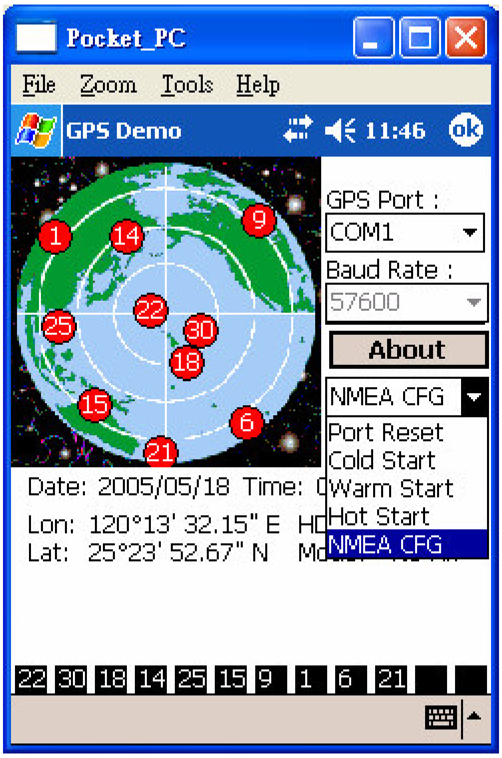


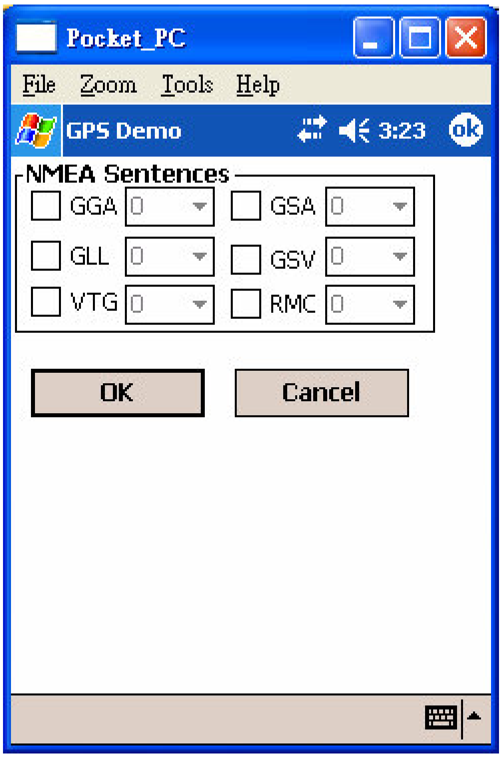




Selecting Cold/Warm/Hot Start in function scroll bar, then click **Action** to initialize Cold/Warm/Hot Start function.

4.4. NMEA Configuration

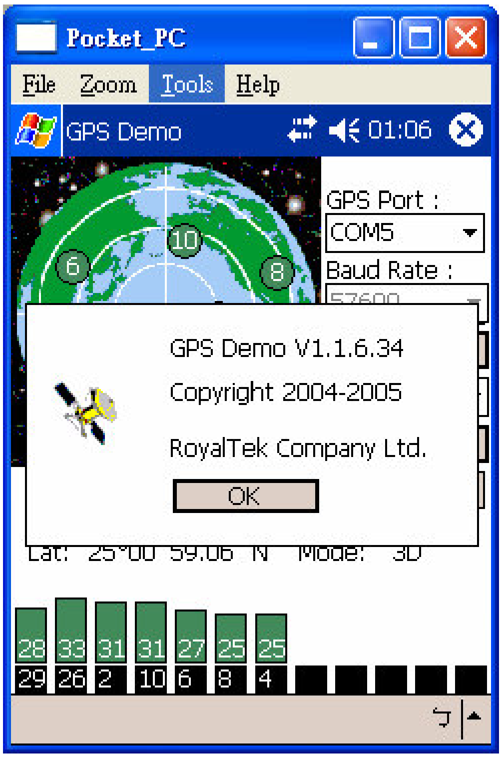




Selecting NMEA CFG in function scroll bar, then click **Action** to do NMEA sentence setting.

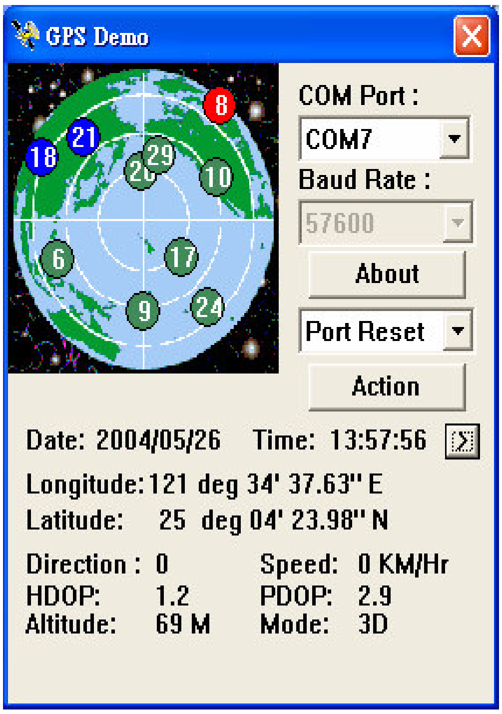
4.5. About

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4.6. Next Screen

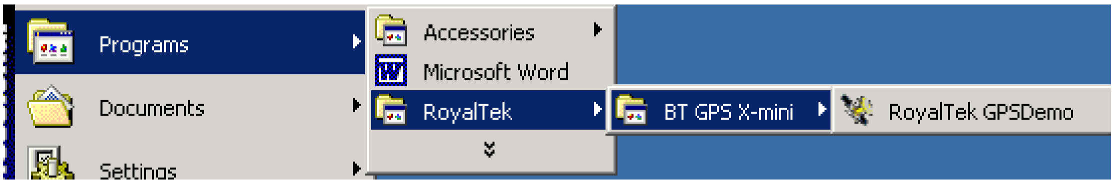
Clicking > to switch GPS bar chart image to have more GPS data.



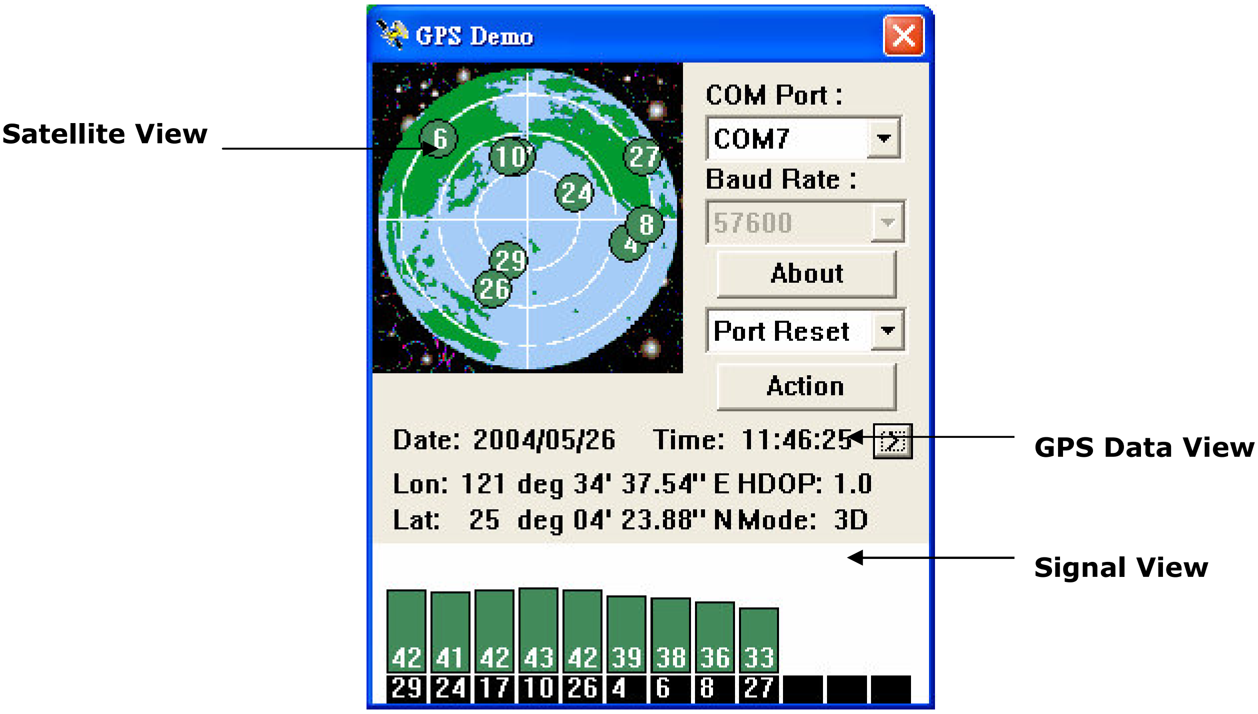
5. GPS Test on PC

5.1. Execute GPS Demo Program

Execute GPS Demo program by double clicking **RoyalTek GPS Demo** icon on **Programs** menu.



5.2. GPS Demo Screen



5.2.1. GPS Port:

Searching GPS port automatically or select COM1 as the default COM port.

5.2.2. Baud Rate:

Select baud rate: 57600.

5.2.3. About:

Displays software version.

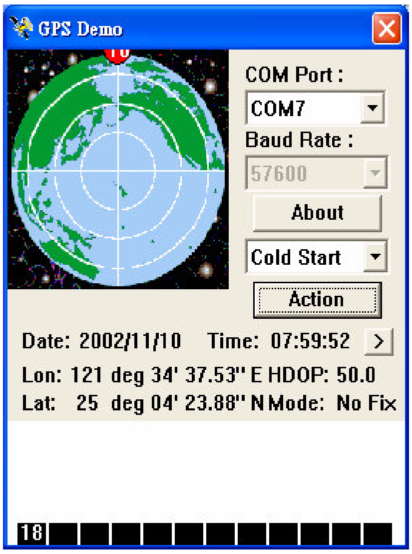
5.2.4. Action:

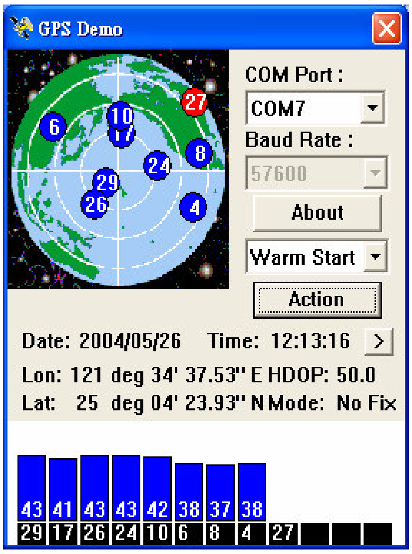
Select GPS action.

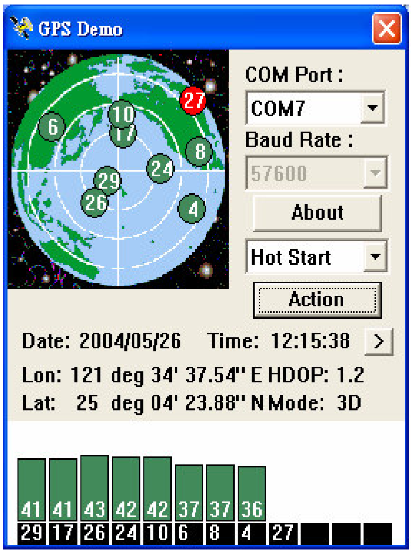
5.2.5. >

Next screen.

5.3. Cold/Warm/Hot Start

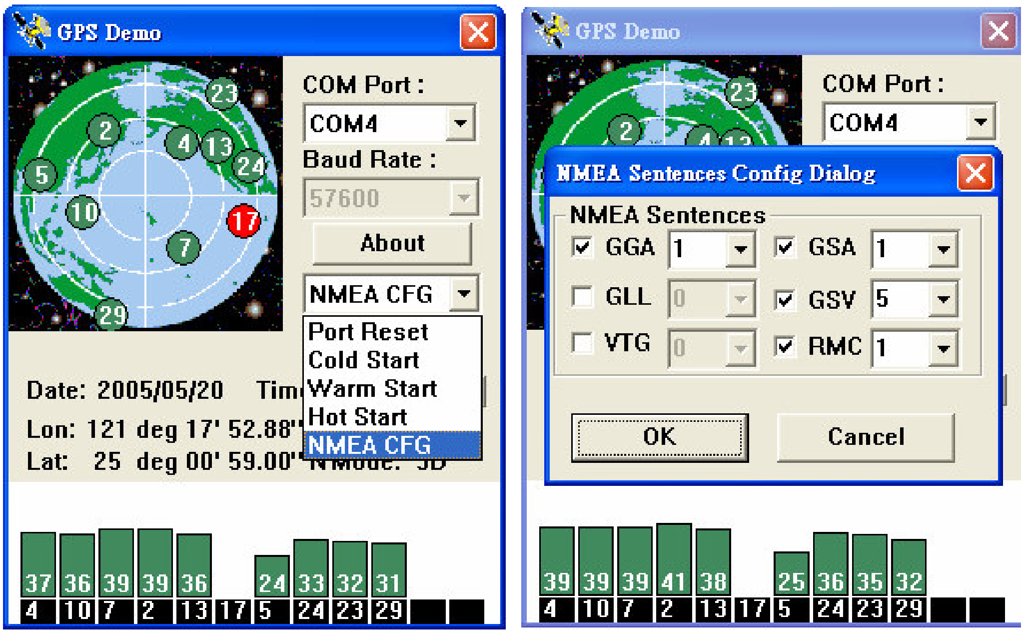






Selecting Cold/Warm/Hot Start in function scroll bar, then click **Action** to initialize Cold/Warm/Hot Start function.

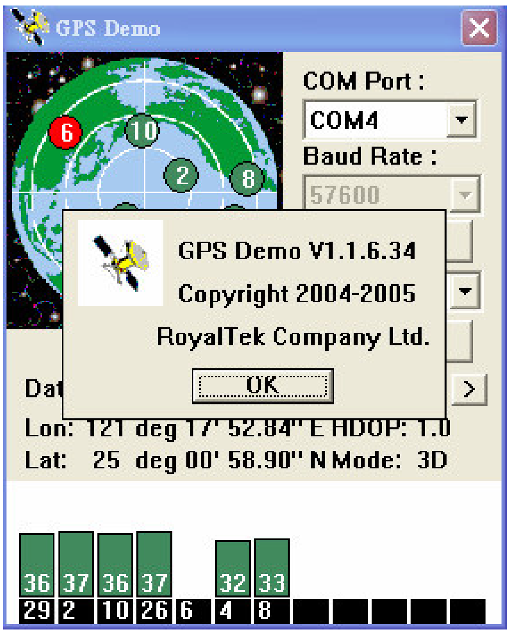
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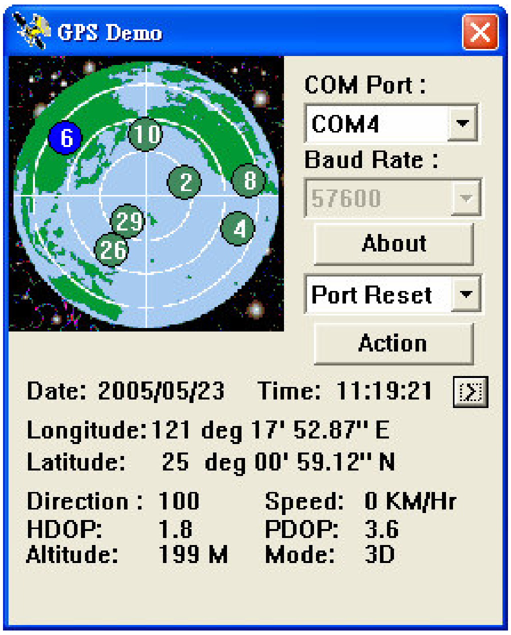
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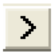
5.5. About

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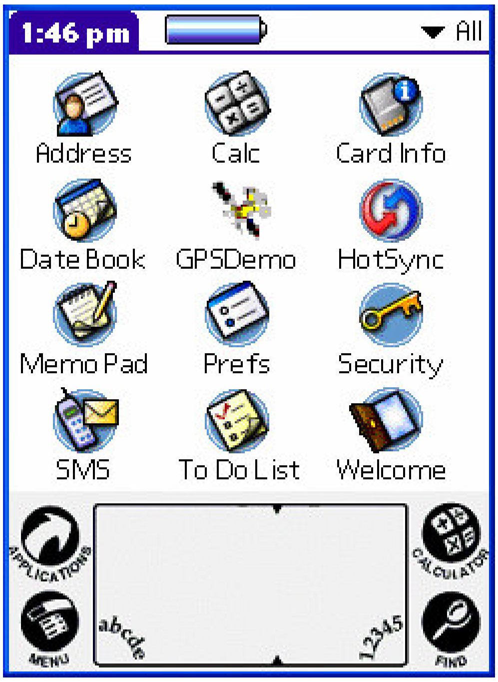
5.6. Next Screen



Clicking  to switch GPS bar chart image to have more GPS Data.

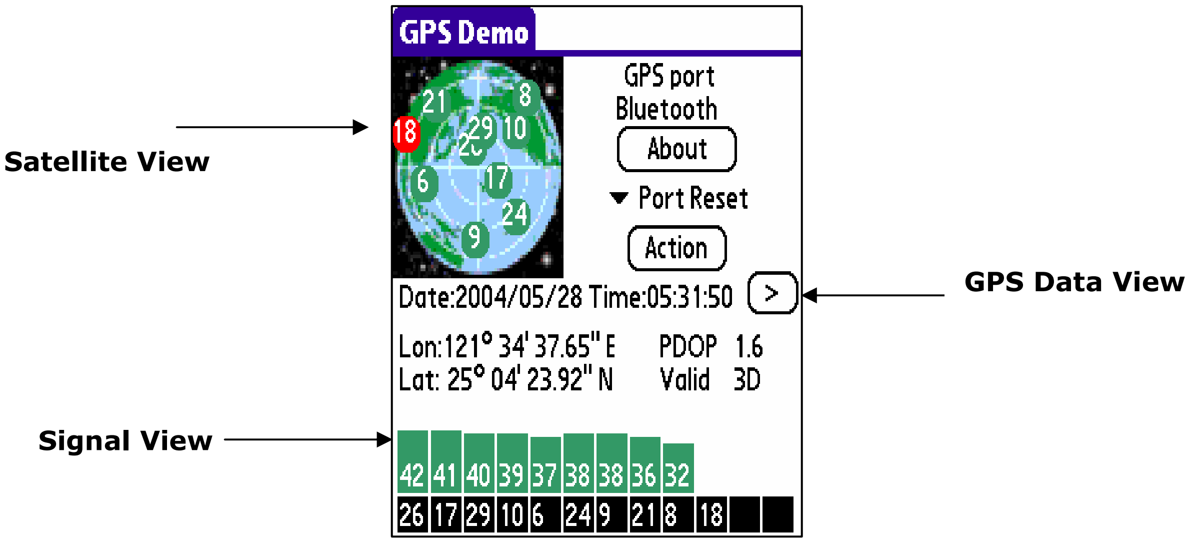
6. GPS Test on PDA of Palm OS

6.1. Execute GPS Demo Program



Execute RoyalTek GPS Demo program by double clicking **RoyalTek GPS Demo** icon on **Programs** menu.

6.2. GPS Demo Screen



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Searching GPS port automatically or select COM1 as the default COM port.

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Select baud rate: 57600.

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Displays software version.

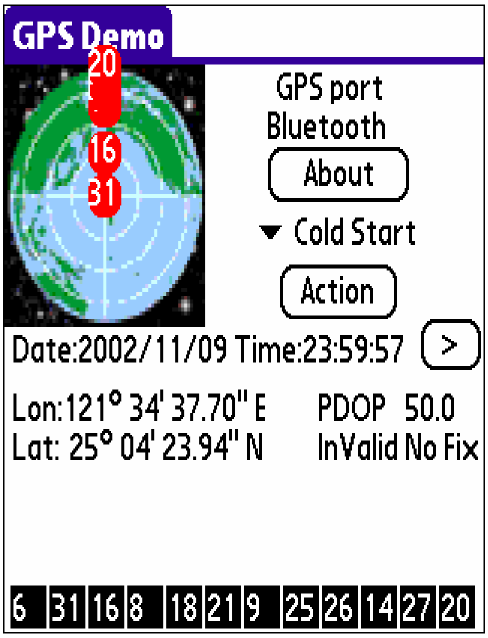
6.2.4. Action:

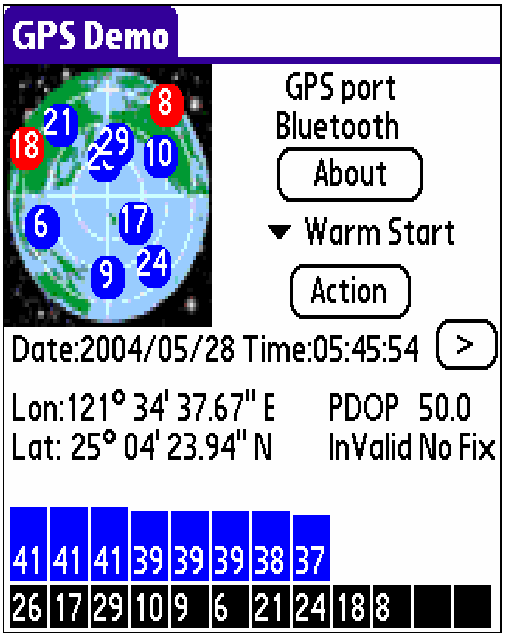
Select GPS action.

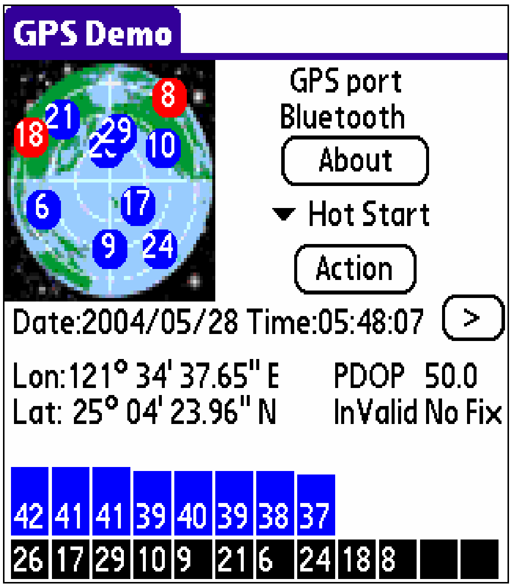
6.2.5. >

Next screen.

6.3. Cold/Warm/Hot Start







Selecting Cold/Warm/Hot Start in function scroll bar, then click **Action** to initialize Cold/Warm/Hot Start function.

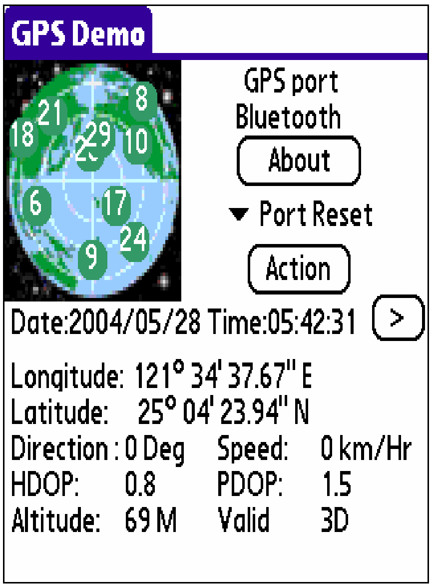
6.4. About

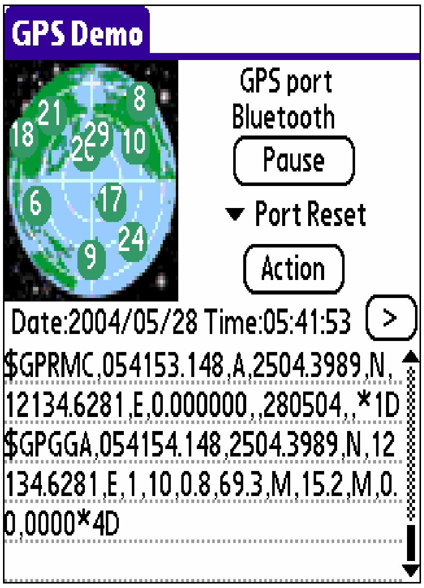
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6.5. Next Screen

Clicking [>] to switch GPS bar chart image to have more GPS data.





7. Explanation of GPS Terminology

TTFF

Time to first fix(cold start, warm start and hot start)

Revision History

Data	Revision	Note
4/24/2005	V0.9	Preliminary manual
5/23/2005	V1.0	First release

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